Listing of Claims

Claim 1 (Currently amended). A ~~blood~~ fluid processing system comprising

~~a filter for removing leukocytes from blood,~~

first and second fluid pressure actuated pump stations, wherein each of said first and second fluid pressure actuated pump stations comprises a separate fluid inlet and a separate fluid outlet, and

a fluid pressure actuator operating to selectively apply fluid pressure pump strokes in tandem to the first and second pump stations to convey fluid from a source to a destination ~~the filter~~, the fluid pressure actuator including a control function to switch between a first flow mode, in which the pump strokes draw a fluid volume into the fluid inlet of the first pump station from the source and expel a fluid volume from the fluid outlet of the second pump station to the destination ~~filter~~, and a second flow mode, in which the pump strokes draw a fluid volume into the fluid inlet of the second pump station from the source and expel a fluid volume from the fluid outlet of the first pump station to the destination ~~filter~~, the control function operating to synchronize the pump strokes so that fluid flow from the source is essentially continuous while fluid flow to the destination ~~filter~~ is pulsatile.

Claim 2 (Currently amended). A system according to claim 1

wherein the source comprises a ~~blood~~ fluid collection container.

Claim 3 (Currently amended). A system according to claim 2

wherein the ~~blood~~ fluid collection container receives ~~blood~~ fluid from a ~~blood~~ fluid separation device.

Claim 4 (Original). A system according to claim 1

wherein the first and second fluid pressure actuated pump stations apply positive and negative fluid pressure.

Claim 5 (Original). A system according to claim 1

wherein the first and second fluid pressure actuated pump stations apply positive and negative pneumatic pressure.

Claim 6 (Currently amended). A system according to claim 1

wherein the destination comprises ~~filter communicates with~~ a ~~blood~~ fluid collection container located in a downstream flow direction from said first and second fluid pressure actuated pump stations to receive ~~blood~~ fluid expelled from the fluid outlet of at least one of said first and second pump stations. ~~after passage through the filter.~~

Claim 7 (New) A blood processing system comprising

first and second fluid pressure actuated pump stations, wherein each of said first and second fluid pressure actuated pump stations comprises a separate blood inlet and a separate blood outlet, and

a fluid pressure actuator operating to selectively apply fluid pressure pump strokes in tandem to the first and second pump stations to convey blood from a source to a destination, the fluid pressure actuator including a control function to switch between a first flow mode, in which the pump strokes draw a blood volume into the blood inlet of the first pump station from the source and expel a blood volume from the blood outlet of the second pump station to the destination, and a second flow mode, in which the pump strokes draw a blood volume into the blood inlet of the second pump station from the source and expel a blood volume from the blood outlet of the first pump station to the destination, the control function operating to synchronize the pump strokes so that blood flow from the source is essentially continuous while blood flow to the destination is pulsatile.

Claim 8 (New). A system according to claim 7

wherein the source comprises a blood collection container.

Claim 9 (New). A system according to claim 8

wherein the blood collection container receives blood from a blood separation device.

Claim 10 (New). A system according to claim 7

wherein the first and second fluid pressure actuated pump stations apply positive and negative fluid pressure.

Claim 11 (New). A system according to claim 7

wherein the first and second fluid pressure actuated pump stations apply positive and negative pneumatic pressure.

Claim 12 (New). A system according to claim 7

wherein the destination comprises a blood collection container located in a downstream flow direction from said first and second fluid pressure actuated pump stations to receive blood expelled from the blood outlet of at least one of said first and second pump stations.

Claim 13 (New). A blood processing system comprising

a filter for removing leukocytes from blood,

first and second fluid pressure actuated pump stations, wherein each of said first and second fluid pressure actuated pump stations comprises a separate blood inlet and a separate blood outlet, and

a fluid pressure actuator operating to selectively apply fluid pressure pump strokes in tandem to the first and second pump stations to convey blood from a source to the filter, the fluid pressure actuator including a control function to switch between a first flow mode, in which the pump strokes draw a blood volume into the blood inlet of the first pump station from the source and expel a blood volume from the blood outlet of the second pump station to the filter, and a second flow mode, in which the pump

strokes draw a blood volume into the blood inlet of the second pump station from the source and expel a blood volume from the blood outlet of the first pump station to the filter, the control function operating to synchronize the pump strokes so that blood flow from the source is essentially continuous while blood flow to the filter is pulsatile.

Claim 14 (New). A system according to claim 13

wherein the source comprises a blood collection container.

Claim 15 (New). A system according to claim 14

wherein the blood collection container receives blood from a blood separation device.

Claim 16 (New). A system according to claim 13

wherein the first and second fluid pressure actuated pump stations apply positive and negative fluid pressure.

Claim 17 (New). A system according to claim 13

wherein the first and second fluid pressure actuated pump stations apply positive and negative pneumatic pressure.

Claim 18 (New). A system according to claim 13

wherein the filter communicates with a blood collection container located in a downstream flow direction to receive blood after passage through the filter.